

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Before addressing the issues raised in the Official Action, the Examiner's attention is directed to the Information Disclosure Statement filed on November 22, 2004. The Examiner is respectfully requested to consider the documents cited in that Information Disclosure Statement.

Submitted with this Amendment are replacement sheets of drawing figures setting forth minor changes to Figs. 2 and 3 for purposes of consistency with the other drawing figures. The changes are circled in red on the attached annotated copy of Figs. 2 and 3.

By way of this Amendment, Claims 2-10 have been cancelled. Thus, the only claim currently pending in this application is Claim 1.

The Official Action sets forth a rejection of independent Claim 1 based on the disclosure contained in U.S. Patent No. 4,064,973 to *Deem et al.* in view of the disclosure set forth in U.S. Patent No. 4,369,863 to *Farr et al.* That rejection is respectfully traversed for at least the following reasons.

Independent Claim 1 is directed to a wedge-operated brake apparatus that comprises a piston accommodated within a cylinder portion to be axially slideable and to generate a braking force, an actuator for generating a linear brake-actuating input, and a wedge transmission mechanism connected to the actuator to be driving thereby and to convert the linear brake-actuating input into a brake-actuating output in the piston axial direction. The wedge transmission mechanism comprises a first plate member movable together with the piston, a second plate

member disposed in opposition to the first plate member and fixedly secured to a housing, a wedge member disposed between the first and second plate members and engaging respective engaging surfaces of the plate members via rollers, and a holder for rotatably holding the rollers and for holding the wedge member while allowing linear movement of the wedge member.

Deem et al. discloses a disc brake assembly that includes a wedge actuating mechanism 36 located within a housing 30. The wedge actuating mechanism includes a pair of wedge elements 38, 40, with the one wedge element 38 being secured to the end of the housing 30 and the other wedge element 40 including a body 44 that is slidably positioned in a bore 32 of the housing 30. A pushrod 48 is adapted to be moved between the wedges 38, 40 upon brake application. A plurality of rollers 52, 54 are mounted in a roller carrier 50, and the roller carrier 50 is carried by the pushrod 48.

It is understood from the Official Action that the pushrod 48 disclosed in *Deem et al.* corresponds to the claimed wedge member, the wedge elements 40 (44), 38 disclosed in *Deem et al.* correspond to the claimed first and second plate members respectively, and the rollers 52, 54 correspond to the claimed rollers.

One of the differences between the brake apparatus at issue here and the disc brake assembly disclosed in *Deem et al.* involves the configuration of the holder that rotatably holds the rollers and also holds the wedge member. The holder comprises a pair of plates which constrain the wedge member, the first plate member and the second plate member in the axial direction of the roller, and a plurality of connecting pillars integrally connecting the pair of plates. In *Deem et al.*, the holder 50 does not include a pair of plates constraining the pushrod 48 and the wedge elements 38, 40 (44), wherein the plates are integrally connected by way of

plural connecting pillars. Claim 1 has been amended to recite this distinction for purposes of better clarifying differences between the claimed subject matter at issue here and the disclosure in *Deem et al.*

Farr et al. discloses an internal shoe-drum brake utilizing wedge transmission mechanisms as illustrated in Figs 9, 10 and 13. However, *Farr et al.* does not make up for the deficiencies pointed out above with respect to the disclosure contained in *Deem et al.* That is, *Farr et al.* does not disclose a wedge transmission mechanism that includes, together with the other claimed features, a holder rotatably holding the rollers and holding the wedge member, wherein the holder comprises a pair of plates constraining the wedge member, the first plate member and the second plate member in the axial direction of the roller, with such plates being integrally connected by plural connecting pillars. Thus, the disclosure contained in *Farr et al.* considered together with the disclosure in *Deem et al.* would not have directed one to construct a brake apparatus having the combination of features set forth in Claim 1. Accordingly, withdrawal of the rejection based on the combined disclosures contained in *Deem et al.* and *Farr et al.* is respectfully requested.

The Official Action also refers to U.S. Patent No. 5,137,126 to *Magnaval et al.* for its disclosure of an electric actuator. However, the disclosure in *Magnaval et al.* does not make up for the deficiencies pointed out above with respect to the disclosures contained in *Deem et al.* and *Farr et al.* Accordingly, the disclosure contained in *Magnaval et al.* would not have directed one to modify the disc brake assembly disclosed in *Deem et al.* in a way that would have resulted in the claimed brake apparatus set forth in Claim 1.

With respect to the obviousness-type double patenting rejection based on Claims 1-3 of copending Application No. 10/629,862 and the disclosure in *Deem et*

et al., Claims 1-3 of the copending application do not recite a holder having the features set forth in Claim 1 of this application, including a pair of plates which constrain the wedge member, the first plate member and the second plate member in the axial direction of the roller, with a plurality of connecting pillars integrally connecting the pair of plates. In addition, as pointed out above, the holder described in *Deem et al.* does not include a pair of plates constraining the pushrod 48 and the wedge elements 38, 40 (44), wherein the plates are integrally connected by way of plural connecting pillars. Thus, withdrawal of the obviousness-type double patenting rejection is respectfully requested.

It is believed that this application is in condition for allowance and such action is earnestly solicited.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: December 30, 2004

By: Matthew L Schneider
Matthew L. Schneider
Registration No. 32,814

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

AMENDMENTS TO THE DRAWINGS

Attached are two replacement sheets of drawing figures for this application, including Figs. 2-4. The two replacement sheets of drawing figures replace the two sheets of drawing figures originally filed with this application that include Figs. 2-4. The replacement sheets of drawing figures include minor changes to Figs. 2 and 3 for purposes of consistency with the other drawing figures. Attached are annotated versions of Figs. 2 and 3 in which the changes are circled in red.

Replacement Sheets

Annotated Sheets

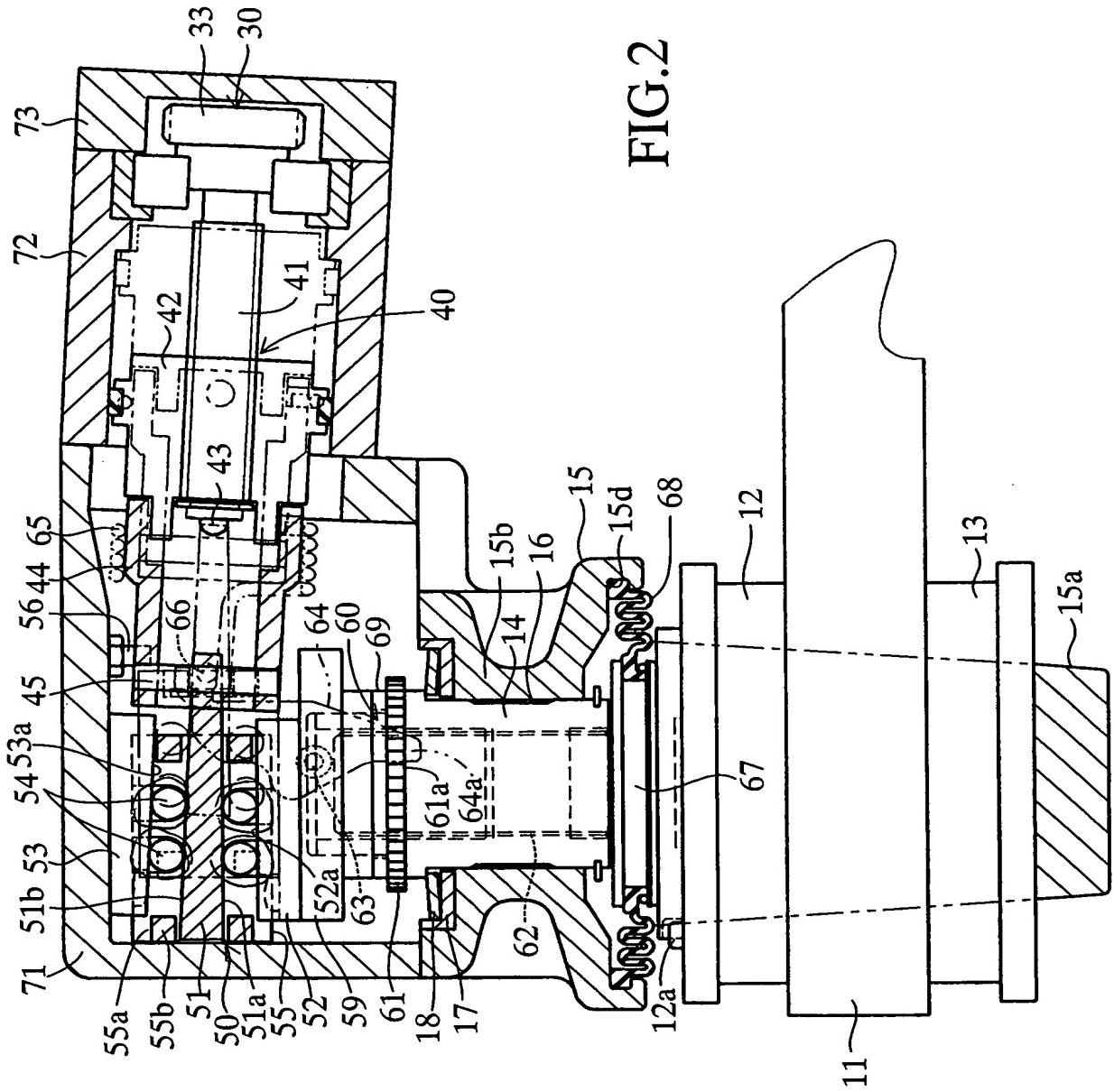


FIG. 2

FIG.3

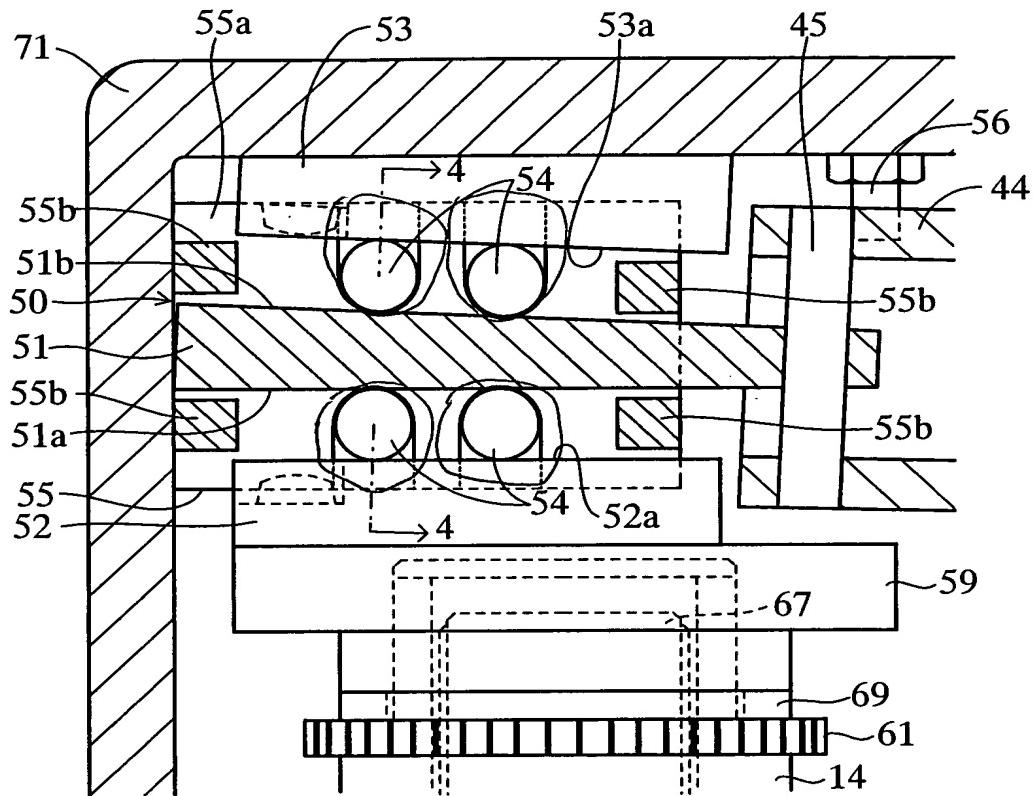


FIG.4

